



High Purity, High Recovery, High Throughput

Agilent Technologies Offers Two New Lines
of Preparative HPLC Columns



Agilent Technologies

New Choices for Preparative LC and High-Throughput Purification

Agilent Technologies offers a complete line of columns for the Agilent 1100 Series Purification System and for other preparative and purification needs. In selecting HPLC columns from Agilent Technologies, you are purchasing more than just products. You will benefit from nearly four decades of instrument design experience, coupled with consistent consumables quality and unrivaled chromatography expertise. You can rely on Agilent to help you attain the reproducible results you need.

Columns for our 1100 Series Purification System range from scalar size (4.6 mm I.D.) to preparative sizes (21.2 to 50 mm I.D.). Expanding your capabilities, new Prep columns give you a choice of 5 μ m particles and 10 μ m particles.

These are the columns to use if you want:

- Maximum yield
- Easy scalability
- Exceptional stability, which means greater reliability

Agilent Prep or ZORBAX PrepHT (high throughput) columns let you isolate and purify any compound—in even the most difficult samples.



The Agilent Prep column provides the highest sample loading (by mass) in the industry—so you can purify more sample in less time.



The Agilent ZORBAX PrepHT columns offer high purity and high recovery.

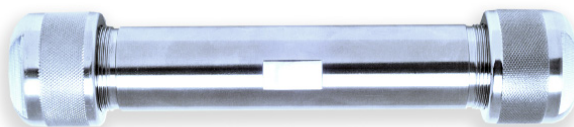
Agilent Prep Columns: the Newest Addition to Agilent LC Columns

Agilent's new line of preparative HPLC columns lets you reliably purify large amounts of target compounds at a lower cost. These larger-size columns are designed for laboratory-scale sample purification from microgram to gram quantities. They provide easy isolation and purification of compounds of interest—ideal for use with the Agilent 1100 Series Purification System.

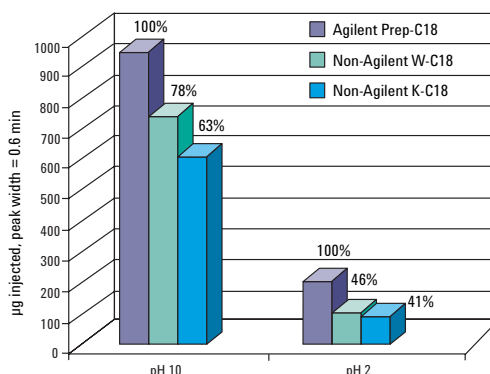
Choice of Particle Sizes

The new 5 μm particles and 10 μm particles Prep columns provide:

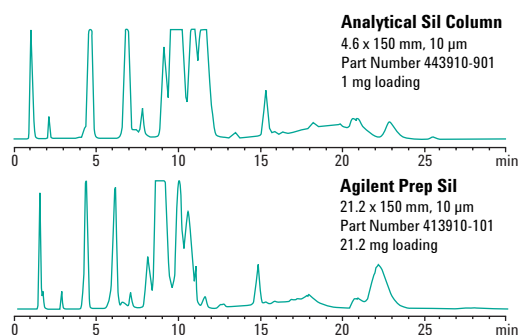
- High-throughput purification and high resolution (with 5 μm particles)
- Higher loadability than non-Agilent columns at lower pressure and lower cost (with 10 μm particles)
- Superior efficiency and peak shape with both 5 μm and 10 μm particle sizes



**Agilent Prep-C18 Column—
Highest Mass Loading at pH 2 and 10**



**Reliable Scale-up on Analytical and Preparative Columns—
Sample: Crude Lecithin Extract**



Superior Sample Loading

Agilent Prep LC columns are available with C18 and bare silica packing, offering high carbon load and high surface area. This allows the maximum amount of sample that can be placed onto the column without reducing selectivity.

These columns provide highest sample loading at both low and high pH, which maximizes product yield and system throughput.

A completely new, Agilent-designed bonded phase and new silica give you greater selectivity and the best sample loading across a wide range of analyses.

Easy, Reliable Scale-up

A variety of dimensions allows you to develop methods and easily scale from microgram to gram quantities of sample *with reliable results*. This makes method transfer simple and predictable.

Excellent Column Stability

These columns are exceptionally stable, maintaining good efficiency and peak shape for more than 1,000 injections.

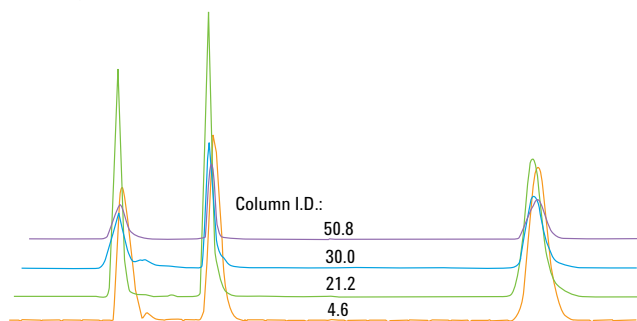
Longer Column Lifetime

These are the first columns from Agilent to use a 10 μ m particle size, allowing lower column pressure and thus longer column lifetime.

Agilent's unique packing and hardware ensure that you will experience superior bed stability and extended column lifetime.

Scalability of Agilent Prep-C18

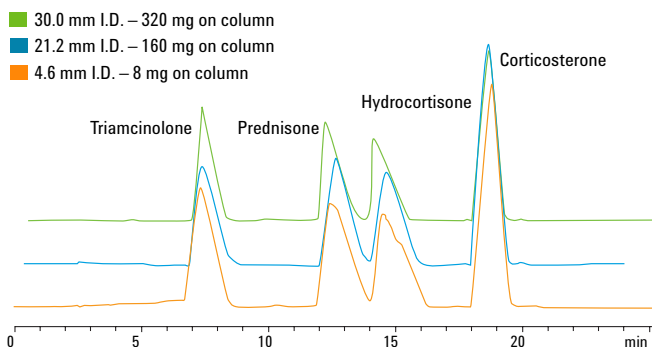
10 μ m; 150 mm length; 4.6, 21.2, 30.0 and 50.8 mm I.D.s



Reliable scale-up from 4.6 to 50 mm I.D. with Agilent Prep columns

Scalability and Loadability of Agilent Prep-C18

Overlay of chromatographic results from 4.6 mm I.D. to 30.0 mm I.D.



The analytical sample was overloaded and excellent loadability and reliable scale-up was achieved with a sample of corticosteroids.

Conditions

Columns:	4.6, 21.2, 30 mm x 150 mm, 10 μ m Agilent Prep-C18	Flow rate:	1 mL/min, 4.6 mm I.D.
Mobile phase A:	Water	Flow rate:	21.2 mL/min, 21.2 mm I.D.
Mobile phase B:	50% Acetonitrile: 17% Methanol: 33% Isopropanol (v/v)	Flow rate:	42.4 mL/min, 30.0 mm I.D.
Gradient:	Time 0, 25% B; 7 min, 25% B; 15 min, 34% B; 15.1 min, 45% B; 20 min, 45% B; 20.1 min, 25% B; Stop time: 24 min	Injection solvent:	DMSO
		Injection volume:	4.6 mm I.D.: 80 μ L; 21.2 mm I.D.: 1600 μ L; 30.0 mm I.D.: 3200 μ L
		Injection loop:	21.2, 1500 μ L; 30, 5000 μ L
		DAD settings:	Detector wavelength: 244.8; Ref. 360,100
		Flowcell:	0.06 mm pathlength

Benefits of Agilent Prep HPLC Columns

- **Highest sample loading** in the industry, for maximum sample purification
- **Available in 21.2, 30 and 50 mm I.D.** with lengths ranging from 50 to 250 mm
- **Easy scalability** from 4.6 mm I.D. to 50 mm I.D. for rapid method development
- Prep 21.2 mm I.D. columns **available with Agilent's Preparative Cartridge Hardware**. This makes it simple to use columns with different lengths to increase sample load. Guard columns are easily integrated, giving superior protection of the purification column.
- **Exceptional column stability** up to pH 10 for reliability, reproducibility and method flexibility
- **Most widely used bonded phases**, making them compatible with most analyses while enabling use of just one column for the majority of your applications
- **Extended** column lifetime

Loadability Comparisons on Prep Materials Methyl/Ethyl Benzoate

Column	mg loaded on column at Rs= 1.25	mg loaded per gram of packing	mg loadable in 50 x 250 mm column
Agilent Prep-C18	4.80	3.47	1,735 mg
Competitor 1 C18	4.45	2.68	1,340 mg
Competitor 2 C18	3.88	2.32	1,160 mg

Conditions

Column: 10 µm particles
 Mobile Phase: A: H₂O B: Methanol
 Isocratic Conditions: 70.5% - 78% B (initial resolution = 1.8)
 Column Temperature: 30 °C
 Sample: 100 mg/mL each of Methyl Benzoate and Ethyl Benzoate in 90% Methanol, serially diluted with 70% Methanol
 Injection: 125 µL of each dilution

Order Guide for Agilent Prep Columns

Available in dimensions up to 50 mm I.D.				
Column description	Size (mm)	Particle size (µm)	C18	Silica
Scalar	4.6 x 250	10	440910-902	440910-901
Scalar	4.6 x 150	10	443910-902	443910-901
Scalar	4.6 x 100	10	449910-902	—
Scalar	4.6 x 250	5	440905-902	440905-901
Scalar	4.6 x 150	5	443905-902	443905-901
Scalar	4.6 x 100	5	449905-902	449905-901
Scalar	4.6 x 50	5	446905-902	446905-901
PrepHT cartridge columns (require hardware kit 820400-901)				
PrepHT	21.2 x 250	10	410910-102	410910-101
PrepHT	21.2 x 150	10	413910-102	413910-101
PrepHT	21.2 x 150	5	443905-102	443905-101
PrepHT	21.2 x 100	5	449905-102	449905-101
PrepHT	21.2 x 50	5	446905-102	446905-101
Standard fittings (no hardware required)				
Prep 30	30 x 250	10	410910-302	410910-301
Prep 30	30 x 150	10	413910-302	413910-301
Prep 30	30 x 100	10	419910-302	419910-301
Prep 30	30 x 100	5	449905-302	449905-301
Prep 30	30 x 50	5	446905-302	446905-301
Prep 50	50 x 250	10	410910-502	410910-501
Prep 50	50 x 150	10	413910-502	413910-501
Prep 50	50 x 100	10	419910-502	419910-501
Prep 50	50 x 100	5	449905-502	449905-501
Prep 50	50 x 50	5	446905-502	446905-501
PrepHT Column Hardware Kit	—	—	820400-901	820400-901
PrepHT Guard Cartridges, 2/pack	21.2 x 10	10	420212-902	420212-901
Prep HT Guard Hardware	—	—	820444-901	820444-901
Prep External Guard Hardware	—	—	420420-901	420420-901

Additional configurations and bulk packing are available upon request.

ZORBAX PrepHT HPLC Columns: Ideal for High-Throughput or Difficult Analyses



Want high purity, high recovery and high throughput? ZORBAX PrepHT columns offer additional choices for scale-up of small and large molecules such as peptides and proteins, under difficult conditions, or when you want high throughput. These columns come in 21.2 mm I.D. You can scale up to this size from all Agilent ZORBAX bonded phases.

Particle Sizes

Particle sizes include 5 μm and 7 μm for very high resolution. This allows high loadability, high yield and high purity of compounds. These particle sizes provide extra resolution for critical analyses when purifying small amounts (milligrams) of sample.

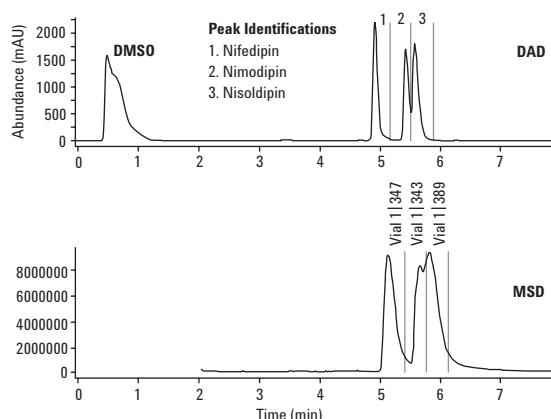
Higher Flow Rates for Faster Analyses

The larger diameter and mechanically stronger ZORBAX particles allow flow rates up to 100 mL/min for 21.2 mm I.D., for fast throughput. Moreover, these are the right columns to use for complex and difficult samples when your separations are driven by selectivity.

Compound Confirmation

For high-throughput preparative separations, the identity of analytes is easily confirmed using mass-based purification.

High Purity and High Recovery with ZORBAX PrepHT Columns



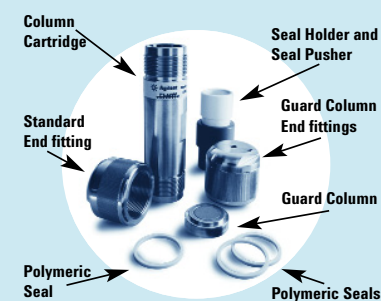
	Amount Nifedipin [mg]	Amount Nimodipin [mg]	Amount Nifedipin [mg]		
Fraction 1	18.90	0.11	0.16	Purity Nifedipin	98.6%
Fraction 2	0.29	17.66	0.77	Purity Nimodipin	94.4%
Fraction 3	0.49	1.66	18.36	Purity Nifedipin	89.5%
Recovery [mg]	19.68	19.43	19.29		
Recovery [%]	101.3	102.0	101.9		

Mass-based fraction collection using ZORBAX SB-C18 column shows high purity and high recovery of each compound (Agilent publication number 5988-7113EN). The separation of the three antianginal drugs was successfully done in a single run with high recovery and >90% purity.

Benefits of ZORBAX PrepHT HPLC Columns

- Available in a **variety of bonded phases**: Eclipse XDB, StableBond, Bonus-RP and Extend-C18 for optimized resolution and loadability under any conditions
- **Easy scale-up** from analytical to preparative scale without losing resolution
- **Fast preparative separation** up to 2,000 mg
- **Easy to install**, with finger-tight connections that seal up to 5,000 psi/350 bar

PrepHT Columns are Easy to Use



PrepHT cartridge columns with reusable end fittings have a unique design that makes them easy to install and seal finger-tight up to 5,000 psi. The economical cartridge design allows for an integral guard column to be used, which prolongs the life of the PrepHT column without adding any delay volume in rapid gradient sample purification.

Order Guide for ZORBAX PrepHT HPLC Columns

ZORBAX Eclipse XDB and Bonus-RP PrepHT					
Column Description	Size (mm)	Particle Size (µm)	XBD-C18 USP L1	XBD-C8 USP L7	Bonus-RP
PrepHT Cartridge*	21.2 x 250	7	977250-102	977250-106	878250-101
	21.2 x 150	7	977150-102	977150-106	878150-101
	21.2 x 150	5	970150-902	970150-906	868150-901
	21.2 x 100	5	970100-902	970100-906	868100-901
	21.2 x 50	5	970050-902	970050-906	868050-901
PrepHT Guard Cartridge**	17 x 7.5	5	820212-925	820212-926	820212-928

ZORBAX StableBond (80Å) PrepHT							
Column Description	Size (mm)	Particle Size (µm)	SB-C18 USP L1	SB-C8 USP L7	SB-Aq	SB-CN USP L10	SB-Phenyl USP L11
PrepHT Cartridge*	21.2 x 250	7	877250-102	877250-106	877250-114	877250-105	877250-112
	21.2 x 150	7	877150-102	877150-106	877150-114		
	21.2 x 150	5	870150-902	870150-906	870150-914		
	21.2 x 100	5	870100-902	870100-906	870100-914		
	21.2 x 50	5	870050-902	870050-906	870050-914		
PrepHT Guard Cartridge**	17 x 7.5	5	820212-920	820212-915	820212-933	820212-933	820212-915

ZORBAX StableBond (300Å) PrepHT						
Column Description	Size (mm)	Particle Size (µm)	300SB-C18 USP L1	300SB-C8 USP L7	300SB-C3	300SB-CN USP L10
PrepHT Cartridge*	21.2 x 250	7	897250-102	897250-106	897250-109	897250-105
	21.2 x 150	7	897150-102	897150-106	897150-109	
	21.2 x 150	5	895150-902	895150-906	895150-909	
	21.2 x 100	5	895100-902	895100-906	895100-909	
	21.2 x 50	5	895050-902	895050-906	895050-909	
PrepHT Guard Cartridge**	17 x 7.5	5	820212-921	820212-918	820212-924	820212-924

ZORBAX Extend PrepHT			
Column Description	Size (mm)	Particle Size (µm)	Extend-C18
PrepHT Cartridge*	21.2 x 150	5	770150-902
	21.2 x 100	5	770100-902
	21.2 x 50	5	770050-902
PrepHT Guard Cartridge**	17 x 7.5	5	820212-930

ZORBAX Original PrepHT							
Column Description	Size (mm)	Particle Size (µm)	Sil USP L3	C18 (ODS) USP L1	C8 USP L7	CN USP L10	NH2 USP L8
PrepHT Cartridge*	21.2 x 250	7	877952-101	877952-102	877952-106	877952-105	877952-108

ZORBAX Rx PrepHT				
Column Description	Size (mm)	Particle Size (µm)	Rx-Sil USP L3	Rx-C18 USP L1
PrepHT Cartridge*	21.2 x 250	7	877250-101	877967-102
PrepHT Guard Cartridge**	17 x 7.5	5	820212-919	820212-914

Accessories for PrepHT Hardware	
Description	Part Number
Guard Hardware Kit	820444-901
PrepHT End Fittings	820400-901
Replacement Seals	820385-901

*Requires PrepHT end fittings 820400-901

** Requires Guard hardware kit which contains guard column fitting, seal insertion tool (seal holder and seal pusher), and 1 polymeric seal: P/N 820444-901

Larger 30 mm and 50 mm ID columns also available. Please inquire about availability.

Configurations not shown are available upon request.

For more information on these and other columns, consult the Agilent Web site at www.agilent.com/chem

Agilent Products and Experience Help You Get the Results You Need

Additional Information

For more details about Agilent Prep and ZORBAX PrepHT columns:

- Visit us online at **www.agilent.com/chem/5prep**
- Contact your local Agilent office or authorized Agilent distributor.

For technical assistance in selecting the column that will help give you high purity, high recovery, and high throughput, call:

**1-800-227-9770, option 4
(in the U.S. and Canada)**

For information about the Agilent 1100 Series purification system, visit us online at **www.agilent.com/chem/purification**

You might also want to check the most comprehensive source for chromatography and spectroscopy supplies: *Agilent's 2005-2006 Essential Chromatography Catalog* (publication 5989-1212EN), available in six languages. Here you will find:

- Everything you need for the results you want
- Tips to help you select the products you need, improve the quality of your analyses, and increase laboratory productivity
- Easy-to-follow diagrams for instrument operation and maintenance
- Links to Agilent's web site, where additional resources are continually updated
- Easily accessible references to popular chromatography materials

World-Class Service and Support

Applying nearly four decades of experience in instrument design, laboratory operation, business processes, and regulatory requirements, the Agilent Services team works with you to find the best solutions for your laboratory needs.

Agilent Services help you get the job done with precision so you can:

- Resolve problems quickly
- Optimize your assets
- Extend the life of your instruments
- Maximize uptime

Our service engineers possess the expertise, tools and resources to optimize your laboratory performance and provide fast problem resolution. With Agilent engineers attending to your instruments, your analysts are free to focus on research and analysis.

Look to Agilent Services for compliance, education, consultation, maintenance, repair, telephone support, lab resource management, and more. With our flexible service agreements, you can choose the services that best fit your needs.

Information, descriptions, and specifications in this publication are subject to change without notice.

© Agilent Technologies, Inc. 2005

Printed in U.S.A. March 11, 2005
5989-2350EN



**Don't forget to visit Agilent's
Online Store at
www.agilent.com/chem/store
for easy ordering and lots of
useful information.**



Agilent Technologies